

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A rectangular microwave heating applicator arranged to operate at a predetermined frequency, and comprising a microwave enclosure forming a cavity having first and second transverse dimensions and a longitudinal dimension in ~~[[the]]~~ a direction of propagation of microwave energy, wherein ~~[[said]]~~ the dimensions are such that, at the predetermined frequency, a main power-transferring ~~TE_{ym1n}~~ TE_{ym1n} mode with a long vertical wavelength is enhanced, and a significant amplitude of a complementary ~~TE_{ym2n}~~ TE_{ym2n} mode is created, wherein ~~[[m1]]~~ m₁, ~~[[m2]]~~ m₂, and n are positive odd integers and ~~[[m2]]~~ m₂ and n are both less than or equal to m₁-2, the applicator further comprising two parallel feed slots in a top wall of the applicator connecting the microwave enclosure to a TE₁₀ waveguide, and a metal post arranged at a centerline of the waveguide between the feed slots.

2. (Currently Amended) ~~A microwave~~ The applicator ~~according to~~ of claim 1, further comprising corrugations or metal rods at ~~[[the]]~~ a tunnel bottom of the applicator in order to reduce ~~[[the]]~~ action and spread-out of longitudinal section magnetic (LSM) modes created by the ~~TE_{ym1n}~~ TE_{ym1n} mode.

3. (Currently Amended) ~~A microwave~~ The applicator ~~according to~~ of claim 1, wherein a mode choke is achieved at ~~[[the]]~~ horizontal upper and lower planes of ~~[[the]]~~ tunnel ends of the

applicator ~~by means of using~~ a horizontal elongated quarterwave slot provided in [[the]] vertical y-directed sidewalls of [[the]] tunnel sides of the applicator, and

wherein [[said]] the mode choke [[being]] is adapted to reduce [[the]] microwave leakage in [[the]] tunnel openings of the applicator.

4. (Currently Amended) ~~A-microwave~~ The applicator according to of claim 1, wherein the main power-transferring mode is a TEy31 mode, and

wherein the complementary mode is a TEy11 mode.

5. (Currently Amended) ~~A-microwave~~ The applicator according to of claim 1, wherein the main power-transferring mode is a TEy71 [[made]] mode, and

wherein the complementary mode is a TEy31 mode.

6. (Canceled)

7. (Currently Amended) ~~A-microwave~~ The applicator according to of claim [[6]] 1, wherein a width of the waveguide is about 86 mm, and

wherein [[the]] a height of the waveguide is about 20-25 mm.

8. (Currently Amended) ~~A-microwave~~ The applicator according to of claim [[6]] 1, wherein [[the]] horizontal dimensions of the metal post are 12 mm x 20 mm, and

wherein [[the]] a height of [[said]] the post is about 9-11 mm.

9. (Currently Amended) ~~A microwave~~ The applicator according to of claim ~~[[1]]~~ 4, wherein the first and second transverse dimensions of the cavity are 194 mm x 308 mm, and the longitudinal dimension is 140 mm, in order for the applicator to enhance the main power-transferring TEy31 mode and the complementary TEy11 mode at an operating frequency of 2450 MHz.

10. (Currently Amended) ~~A microwave~~ The applicator according to of claim ~~[[1]]~~ 5, wherein the first and second transverse dimensions of the cavity are 306 mm x 436 mm~~[[. End]]~~, and the longitudinal dimension is 140 mm, in order for the applicator to enhance the main power-transferring TEy71 mode and the complementary TEy31 mode at an operating frequency of 2450 MHz.